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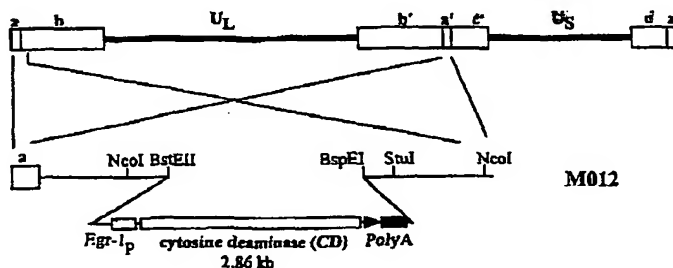
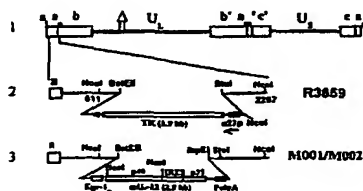
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(54) Title: HERPES SIMPLEX VIRUS EXPRESSING FOREIGN GENES AND METHOD FOR TREATING CANCERS THERE-  
WITH



(57) Abstract: An anti-cancer pharmaceutical composition includes a herpes simplex virus (HSV) vector into which a nucleic acid sequence encoding for an anti-cancer agent selected from interleukin-12, GM-CSF, and CD has been inserted. A method of treatment of a patient suffering from cancer includes administering to the patient the anti-tumor pharmaceutical composition including an HSV vector having a nucleic acid sequence encoding for an anti-cancer agent selected from interleukin-12, GM-CSF, and CD inserted therein.

Both copies of the  $\gamma_1 34.5$  gene (located within the inverted repeat sequences a, a') have been replaced with the CD insert. The background is HSV-1 "F" strain. The CD insert was obtained from the vector pCD2, obtained from the American Type Culture Collection (ATCC), catalog number 40999.

References for CD insert:

Biotechniques 7: 980-990, 1989  
U.S. Pat. 5,358,866 October 25, 1994

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